Reaction Sphere

Completed Technology Project (2016 - 2018)

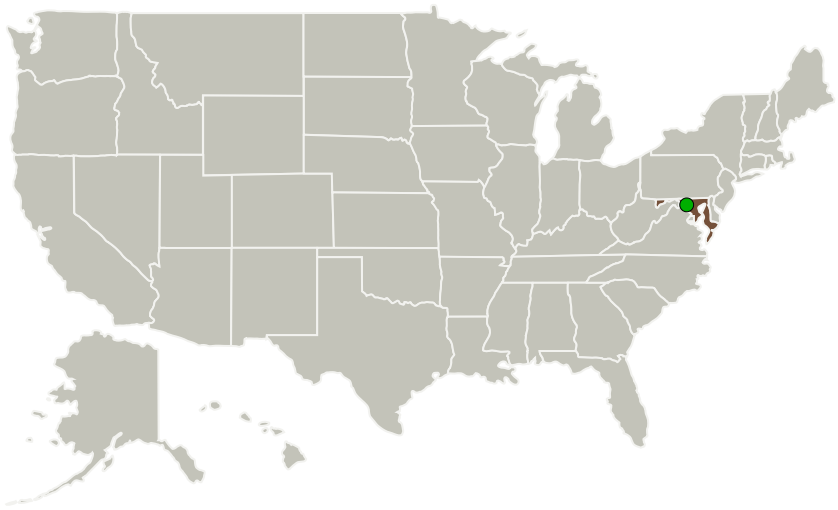
Project Introduction

The Reaction Sphere seeks to provide an advancement over traditional reaction wheels by utilizing a new method of 3 axis attitude control and fine pointing using a lighter and less power consumptive device with less volume required and without the potential for friction wear.

Anticipated Benefits

By utilizing a single mechanism without friction surfaces or bearings to achieve fine pointing and spacecraft attitude control, instead of three or more reaction wheels, the project seeks to reduce weight and volume along with providing increased reliability and mission lifespan.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Northrop Grumman Systems Corporation	Lead Organization	Industry	Falls Church, Virginia
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Reaction Sphere

Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Northrop Grumman Systems Corporation

Responsible Program:

Small Spacecraft Technology

Small Spacecraft Technology

Reaction Sphere

Completed Technology Project (2016 - 2018)

Primary U.S. Work Locations
Maryland

Project Transitions

January 2016: Project Start

April 2018: Closed out

Closeout Summary: Final Report Submitted at Closeout System unable to achi eve rotational speed needed for minimum performance

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Project Management

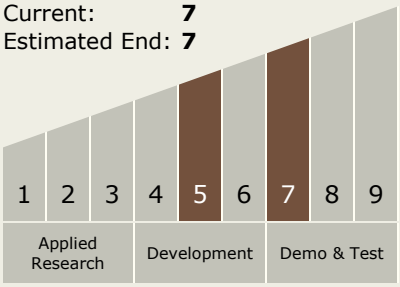
Program Director:
Christopher E Baker

Program Manager:
Roger Hunter

Principal Investigator:
Patti D Bishop

Technology Maturity (TRL)

Start: **5**
Current: **7**
Estimated End: **7**



Target Destination

Earth